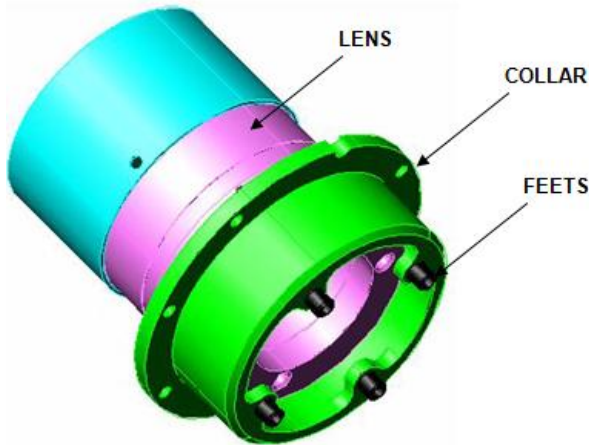
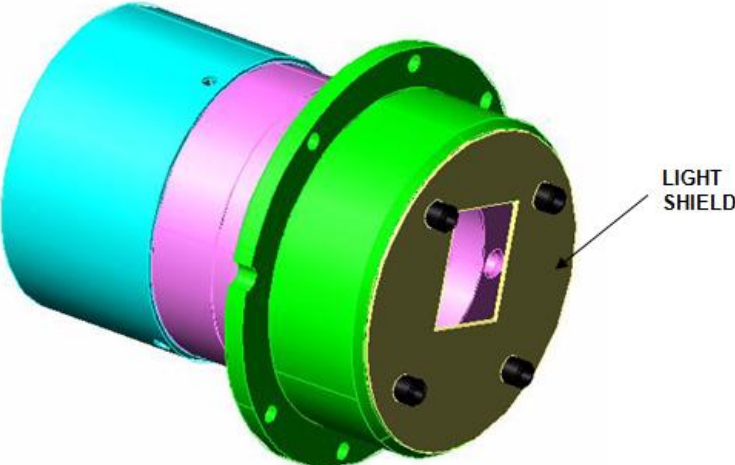
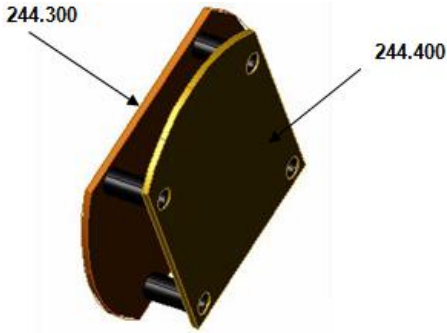
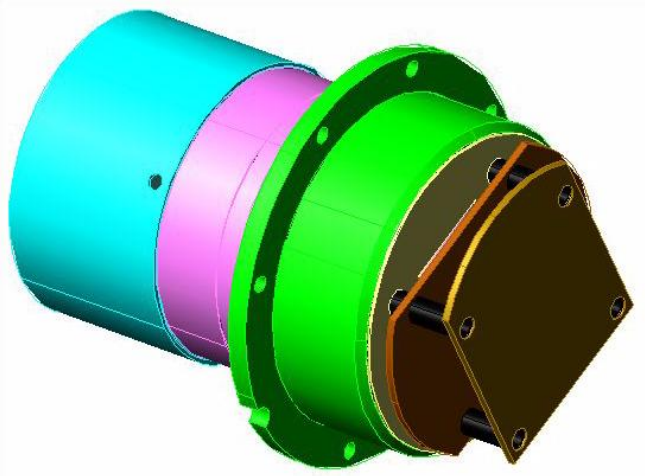
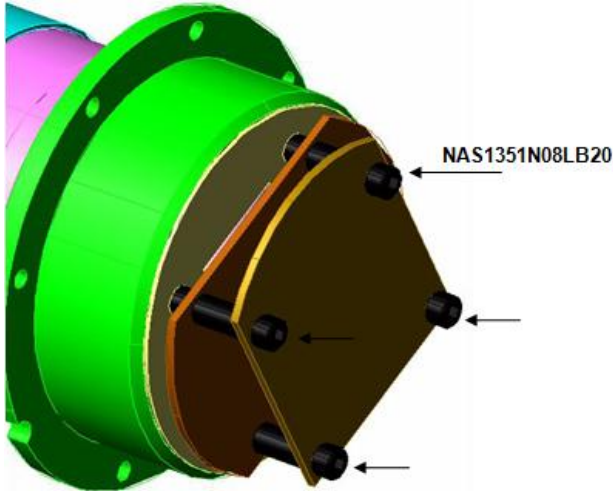
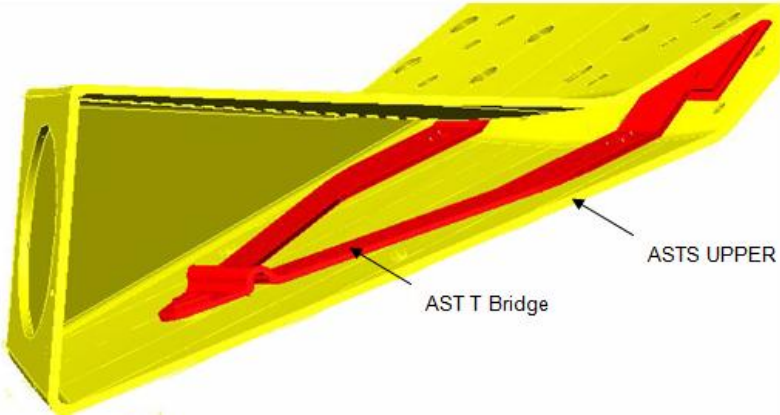


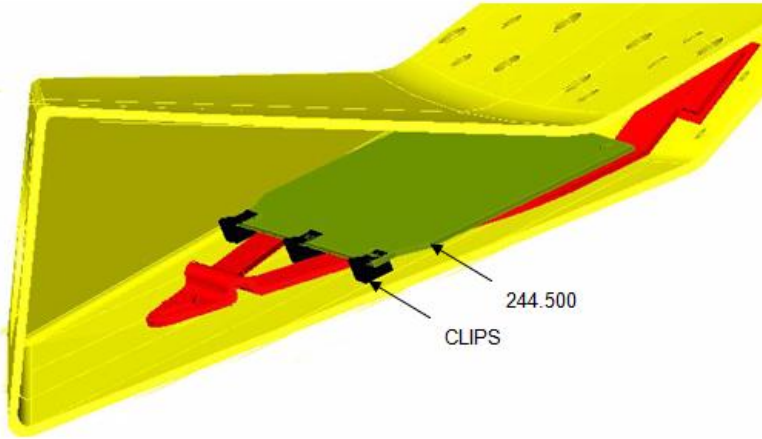
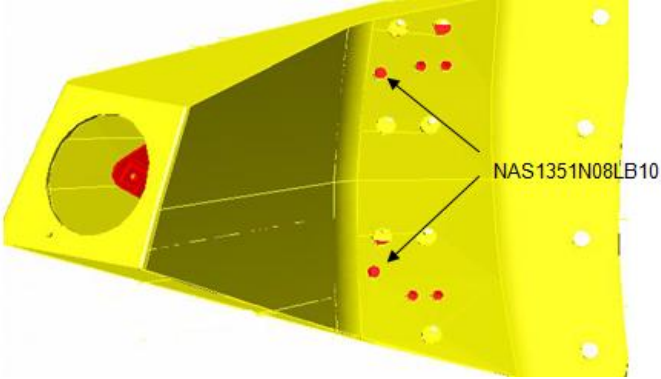
1. PROJECT CODE <b>SA-AMS</b>		2. JPIC CODE <b>AMS</b>		<b>AMS-02 TASK SHEET (ATS)</b>			
T Y P E	<b>A</b>	CONFIGURATION CHANGE		<input checked="" type="checkbox"/>	4. ATS NO. <b>CARIN090612</b>		5. PAGE <b>1</b> OF <b>11</b>
	PERMANENT		<input checked="" type="checkbox"/>	TEMPORARY	<input type="checkbox"/>	6. MOD SHEET(S) NUMBER(S)	
	<b>B</b>	NONCONFIGURATION CHANGE		<input type="checkbox"/>			
10. PART NAME <b>Star Tracker Camera</b>				11. Sub Detector Name <b>ASTC</b>		12. SERIAL/LOT NO.	
14. APPLICABLE DOCUMENTS							
18. ATS TITLE <b>AMS-02 Star Tracker Camera assembly</b>							
20. OPER SEQ. NO.		21. OPERATIONS (Print, Type, or Write Legibly)				VERIFICATION	
						22. TECH	23. QA/DV
		<p><b>This ATS covers the assembly of electronic boards inside the two Star Tracker Cameras.</b></p> <p><b>The two Star Tracker are identical and are mounted on the Si Tracker Plane 1 in AMS +X and AMS -X position.</b></p> <p><b>The Star Tracker mounted at AMS +X is identified in this document as AST0 and its integration is described from point 4 to point 34</b></p> <p><b>The Star Tracker mounted at AMS -X is identified in this document as AST1 and its integration is described from point 35 to point 65</b></p> <p><b>The steps of this ATS may be worked out of order with the cognizant project engineer's approval.</b></p>					
24. ORIGINATOR <b>Fabio Santarossa (CARSO) Jun2009</b>				DATE	25. FINAL ACCEPTANCE STAMP AND DATE		
APPROVALS (Printed or Typed and Signed)							
26. PROJECT ENGINEER <b>Paolo Trampus (CARSO) Jun2009</b>				DATE	27. QUALITY ENGINEER		DATE
28.					29.		
30.					31.		

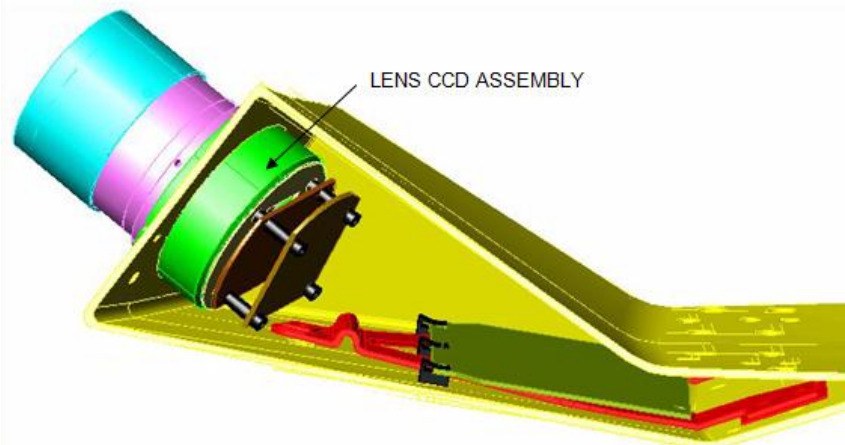
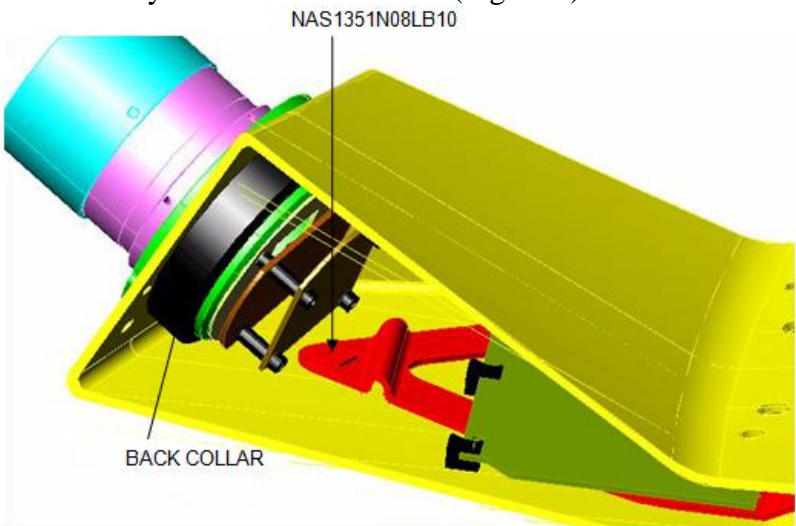


		5. Page 3 of 11	
<b>AMS-02 TASK SHEET (ATS)</b> CONTINUATION PAGE		4. ATS NO.	CARIN090612
		6. MOD NO.	
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
3.	<p>The assembly procedure follows the following steps: preparation of lens assembly, preparation of front end (ASTS 244.300) and buffer board (ASTS 244.400) assembly, preparation of ASTS UPPER, installation of ASTS 244.500 board inside the ASTS UPPER, preparation of lens/collar assembly, installation of lens/collar assembly on the ASTS UPPER, installation and connection of cables, installation of the ASTS SIDE.</p>		
4.	<p>Install the lens (ASTS_242_150 SN1) on the ASTS U COLLAR (ASTS_242_120).</p>  <p style="text-align: center;"><b>Figure 1</b></p>		
5.	<p>Insert the four feets (ASTS FEET COLLAR CCD) into the ASTS U collar (Figure 1).</p>  <p style="text-align: center;"><b>Figure 2</b></p>		
6.	<p>Insert the CCD light shield (ASTS_244_270) on ASTS U COLLAR (Figure 2).</p>		

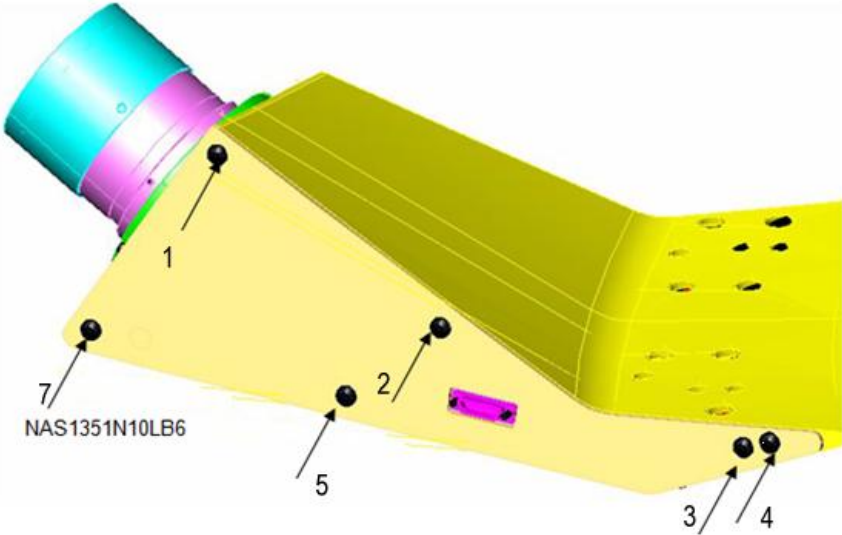
		5. Page 4 of 11	
<b>AMS-02 TASK SHEET (ATS)</b> CONTINUATION PAGE		4. ATS NO.	CARIN090612
		6. MOD NO.	
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)		VERIFICATION
			22. TECH
			23. QA/DV
	 <p style="text-align: center;"><b>Figure 3</b></p>		
7.	Start the assembly of ASTC0 getting ASTS_244_300 SN1 and ASTS_244_400 SN1.		
8.	Insert feets (ASTS U feet CCD CCD1) in the fixing holes of ASTS_244.300 board.		
9.	Verify the complete insertion of feets.		
10.	Couple the ASTS_244_300 SN1 board with 244.400 SN1 board inserting the connection pins mounted on 244.400 board in the mating connectors on 244.300 board.		
11.	Verify the complete insertion of feets on both sides (Figure 3).		
12.	Remove protection glass from the CCD.		
13.	Avoid any hand or tool contacting the open CCD – <u>RISK OF PERMANENT DAMAGE</u>		
	 <p style="text-align: center;"><b>Figure 4</b></p>		
14.	Couple the ASTS_244_300 SN1 ASTS_244.400 SN1 assembly with pre-assembled lens collar (Figure 4).		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
15.	Verify the complete insertion of the feets already istalled on the collar.   <p style="text-align: center;"><b>Figure 5</b></p>		
16.	Install the four (4) Bolts, Hex Head NAS1351N08LB20 that secure the assembly to the collar (Figure 5).		
17.	Install the COAX cable ASTCE-ASTCC on ASTS_244_500 SN3 board (SMA Connector).		
18.	Protect the AST T Bridge under the 244.500 board with Kapton tape		
	 <p style="text-align: center;"><b>Figure 6</b></p>		
19.	Place AST T Bridge in the ASTS UPPER (Figure 6).		

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AMS-02 TASK SHEET (ATS) CONTINUATION PAGE		4. ATS NO.	CARIN090612
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
	<div></div> <p><b>Figure 7</b></p> <p>20. Place the ASTS_244_500 SN3 inside the ASTS UPPER inside the clips (Figure 7).</p> <div></div> <p><b>Figure 8</b></p> <p>21. Install the two (2) Bolts, Hex Head NAS1351N08LB10 that secure the ASTS_244.500 and the ASTS T BRIDGE to the ASTS UPPER (Figure 8).</p> <p>21.1 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.</p> <p>Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027</p> <p>22. Place the (1) Bolt ,NAS1351N3LB6 to be used in a later phase between ASTS UPPER ASTS LOWER securing the bolt with panduit cable tie to retain the bolt until proper installation. Use also Kapton tape in addition if necessary.</p>		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
	 <p style="text-align: center;"><b>Figure 9</b></p>		
23.	<p>Install lens CCD assembly on the ASTS UPPER (Figure 9).</p>  <p style="text-align: center;"><b>Figure 10</b></p>		
24.	Insert and screw the back collar on the collar (Figure 10).		
25.	Install the (1) bolt NAS1351N08LB10 to connect the AST T CCD Link to the AST T Bridge (Figure 10).		
25.1	<p>Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.</p> <p>Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027</p>		
25.2	Apply a the Cho-therm at interface between AST T CCD Link AST T Bridge prior to installation.		



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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
26.	Connect the 244.500 cables to the CCD assembly .		
26.1	Connect the 25 pin connector to the 244.400 mating connector.		
26.2	Install the two connector bolts 0.086(2.2)-56 UNC-2A rotating alternatively 1 turn each of them. Apply a torque of 15 Ncm.		
26.3	Connect the 9 pin connector to the 244.400 mating connector		
26.4	Install the two connector bolts 0.086(2.2)-56 UNC-2A rotating alternatively 1 turn each of them. Apply a torque of 15 Ncm.		
26.5	Connect the SMA connector.		
27.	Install the flight thermocouples as for ATS ATS-Star tracker-TCS000001-1-15.		
28.	Install the ASTS SIDE.		
	 <p style="text-align: center;"><b>Figure 11</b></p>		
28.1	Install the six (6) Bolts, Socket Head NAS1351N10LB6 that secure the ASTS SIDE (Figure 11).		
28.2	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.  Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027		



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<b>AMS-02 TASK SHEET (ATS)</b> CONTINUATION PAGE		4. ATS NO.	CARIN090612
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
	<p>-----</p> <p>AST1</p> <p>29. Install the lens (ASTS_242_150 SN2) on the ASTS U COLLAR (ASTS_242_120).</p> <p>30. Insert the four feets (ASTS FEET COLLAR CCD) into the ASTS U collar (Figure 1).</p> <p>31. Insert the CCD light shield (ASTS_244_270) on ASTS U COLLAR (Figure 2).</p> <p>32. Start the assembly of ASTC0 getting ASTS_244_300 SN2 and ASTS_244_400 SN2.</p> <p>33. Insert feets (ASTS U feet CCD CCD1) in the fixing holes of ASTS_244.300 board.</p> <p>34. Verify the complete insertion of feets.</p> <p>35. Couple the ASTS_244_300 SN2 board with 244.400 SN2 board inserting the connection pins mounted on 244.400 board in the mating connectors on 244.300 board.</p> <p>36. Verify the complete insertion of feets on both sides (Figure 3).</p> <p>37. Remove protection glass from the CCD.</p> <p>38. Avoid any hand or tool contacting the open CCD – <u>RISK OF PERMANENT DAMAGE</u></p> <p>39. Couple the ASTS_244_300 SN2 ASTS_244.400 SN2 assembly with pre-assembled lens collar (Figure 4).</p> <p>40. Verify the complete insertion of the feets already installed on the collar.</p> <p>41. Install the four (4) Bolts, Hex Head NAS1351N08LB20 that secure the assembly to the collar (Figure 5).</p> <p>42. Install the COAX cable ASTCE-ASTCC on ASTS_244_500 SN2 board (SMA Connector).</p> <p>43. Protect the AST T Bridge under the 244.500 board with Kapton tape</p> <p>44. Place AST T Bridge in the ASTS UPPER (Figure 6).</p>		

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<b>AMS-02 TASK SHEET (ATS)</b> CONTINUATION PAGE		4. ATS NO.	CARIN090612
		6. MOD NO.	
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV
45.	Place the ASTS_244_500 SN2 inside the ASTS UPPER inside the clips (Figure 7).		
46.	Install the two (2) Bolts, Hex Head NAS1351N08LB10 that secure the ASTS_244.500 and the ASTS T BRIDGE to the ASTS UPPER (Figure 8).		
46.1	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.  Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027		
47.	Place the (1) Bolt ,NAS1351N3LB6 to be used in a later phase between ASTS UPPER ASTS LOWER securing the bolt with panduit cable tie to retain the bolt until proper installation. Use also Kapton tape in addition if necessary.		
48.	Install lens CCD assembly on the ASTS UPPER (Figure 9).		
49.	Insert and screw the back collar on the collar (Figure 10).		
50.	Install the (1) bolt NAS1351N08LB10 to connect the AST T CCD Link to the AST T Bridge (Figure 10).		
50.1	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.  Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027		
<b>50.2</b>	Apply a the Cho-therm at interface between AST T CCD Link AST T Bridge prior to installation.		
51.	Connect the 244.500 cables to the CCD assembly .		
51.1	Connect the 25 pin connector to the 244.400 mating connector.		
51.2	Install the two connector bolts 0.086(2.2)-56 UNC-2A rotating alternatively 1 turn each of them. Apply a torque of 15 Ncm.		
51.3	Connect the 9 pin connector to the 244.400 mating connector		
51.4	Install the two connector bolts 0.086(2.2)-56 UNC-2A rotating alternatively 1 turn each of them. Apply a torque of 15 Ncm.		
51.5	Connect the SMA connector.		
52.	Install the flight thermocouples as for ATS ATS-Star tracker-TCS000001-1-15.		
53.	Install the ASTS SIDE.		

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AMS-02 TASK SHEET (ATS) CONTINUATION PAGE		4. ATS NO.	CARIN090612	
		6. MOD NO.		
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)		VERIFICATION	
			22. TECH	23. QA/DV
53.1	Install the six (6) Bolts, Socket Head NAS1351N10LB6 that secure the ASTS SIDE (Figure 11).			
53.2				
	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior to installation.			
	Braycote Grease - PN 601EF Lot# 11788 Exp. Date April 26, 2027			